TOWARDS A UNIFIED VIEW OF METAHEURISTICS

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Abstract

This talk provides a complete background on metaheuristics and presents in a unified view the main design questions for all families of metaheuristics and clearly illustrates how to implement the algorithms under a software framework to reuse both the design and code. The key search components of metaheuristics are considered as a toolbox for:

- Designing efficient metaheuristics (e.g. local search, tabu search, simulated annealing, evolutionary algorithms, particle swarm optimization, scatter search, ant colonies, bee colonies, artificial immune systems) for optimization problems.

- Designing efficient metaheuristics for multi-objective optimization problems.

- Designing hybrid, parallel and distributed metaheuristics.

- Implementing metaheuristics on sequential and parallel machines.